IN THE CLAIMS:

The current claims follow. For claims not marked as amended in this response, any difference in the claims below and the previous state of the claims is unintentional and in the nature of a typographical error.

1. (Canceled).

2. (Previously Presented) An audio processor, comprising:

a virtualizer configured to process audio information to virtualize at least one speaker so that, from a listener's perspective, sounds appear to come from at least one direction where a physical speaker is not present; and

a controller configured to cause the virtualizer to virtualize the at least one speaker at any location in a space around the listener, and

wherein the virtualizer comprises:

a filter configured to filter input signals comprising the audio information;

a forward crossover path configured to receive, delay, and filter an output of the filter;

a first combiner configured to produce first output signals for a first physical speaker using the output of the filter;

a second combiner configured to produce second output signals for a second physical speaker using an output of the forward crossover path;

a first feedback crossover path configured to receive, delay, and filter the first output signals, the second combiner further configured to produce the second output signals using an output of the first feedback crossover path; and

a second feedback crossover path configured to receive, delay, and filter the second output signals, the first combiner further configured to produce the first output signals using an output of the second feedback crossover path.

3. (Previously Presented) An audio processor, comprising:

a virtualizer configured to process audio information to virtualize at least one speaker so that, from a listener's perspective, sounds appear to come from at least one direction where a physical speaker is not present; and

a controller configured to cause the virtualizer to virtualize the at least one speaker at any location in a space around the listener, and

wherein the virtualizer comprises:

a plurality of filters configured to filter a plurality of input signals, the input signals comprising at least a portion of the audio information;

a plurality of forward crossover paths each configured to receive, delay, and filter an output from one of the filters;

one or more first combiners configured to produce first output signals for a first physical speaker using an output from at least one of the forward crossover paths and the output from at least one of the filters;

one or more second combiners configured to produce second output signals for a second physical speaker using an output from at least one other of the forward crossover paths and the output from at least one other of the filters;

a first feedback crossover path configured to receive, delay, and filter the first output signals, the one or more second combiners further operable to produce the second output signals using an output from the first feedback crossover path; and

a second feedback crossover path configured to receive, delay, and filter the second output signals, the one or more first combiners further configured to produce the first output signals using an output from the second feedback crossover path.

4. (Previously Presented) The audio processor of Claim 3, wherein:

the one or more first combiners are further operable to produce the first output signals using first unfiltered input signals; and

the one or more second combiners are further operable to produce the second output signals using second unfiltered input signals.

5. (Previously Presented) The audio processor of Claim 4, further comprising an attenuator operable to attenuate third unfiltered input signals;

wherein the one or more first combiners are further operable to produce the first output signals using the attenuated third input signals; and

wherein the one or more second combiners are further operable to produce the second output signals using the attenuated third input signals.

6. (Previously Presented) The audio processor of Claim 3, further comprising a plurality of additional filters each operable to filter one of first, second, and third additional input signals;

wherein the one or more first combiners are further operable to produce the first output signals using the filtered first additional input signals and the filtered third additional input signals; and

wherein the one or more second combiners are further operable to produce the second output signals using the filtered second additional input signals and the filtered third additional input signals.

7. (Currently Amended) An audio processor, comprising:

a virtualizer configured to process audio information to virtualize at least one speaker so that, from a listener's perspective, sounds appear to come from at least one direction where a physical speaker is not present;

a controller configured to cause the virtualizer to virtualize the at least one speaker at any location in a space around the listener; and wherein:

the virtualizer comprises at least one first filter, one or more forward crossover paths each comprising a first delay line and a second filter, and two feedback crossover paths each comprising a second delay line and a third filter; and

the controller causes the virtualizer to virtualize the at least one speaker by individually altering a frequency response of one or more of the filters and a delay of one or more of the delay lines.

8. (Previously Presented) An audio processor, comprising:

a virtualizer operable to process audio information to virtualize at least one speaker so that, from a listener's perspective, sounds appear to come from at least one direction where a physical speaker is not present;

a controller operable to configure the virtualizer, wherein the virtualizer can be configured to virtualize the at least one speaker at any location in a space around the listener; and wherein:

the virtualizer comprises at least one first filter, one or more forward crossover paths each comprising a first delay line and a second filter, and two feedback crossover paths each comprising a second delay line and a third filter;

at least one first filter has a frequency response P of $|P| = \left|\frac{H_i(\phi)}{H_i(\theta)}\right|$,

at least one second filter has a frequency response F of $|F| = \left|\frac{H_c(\phi)}{H_i(\phi)}\right|$,

at least one third filter has a frequency response F_T of $|F_T| = \left|\frac{H_c(\theta)}{H_i(\theta)}\right|$,

at least one first delay line provides a delay D of $D = t(\phi) - t(F)$, and

at least one second delay line provides a delay D_T of $D_T = t(\theta) - t(F_T)$,

wherein θ represents an angle associated with at least one physical speaker, ϕ represents an angle associated with at least one virtualized speaker, H_i represents a transfer function associated with one of the listener's ears, H_c represents a transfer function associated with another of the listener's ears, $t(\phi)$ represents an inter-time difference associated with the at least one virtualized speaker, $t(\theta)$ represents an inter-time difference associated with the at least one physical speaker, $t(F)$ represents a delay associated with at least one second filter, and $t(F_T)$ represents a delay associated with at least one third filter.

9. (Previously Presented) An audio processor, comprising:

a virtualizer operable to process audio information to virtualize at least one speaker so that, from a listener's perspective, sounds appear to come from at least one direction where a physical speaker is not present;

a controller operable to configure the virtualizer, wherein the virtualizer can be configured to virtualize the at least one speaker at any location in a space around the listener; and wherein:

the virtualizer comprises two first filters, two forward crossover paths each comprising a first delay line and a second filter, and two feedback crossover paths each comprising a second delay line and a third filter;

at least one first filter has a frequency response P_S of $|P_S| = \left|\frac{H_i(\phi)}{H_i(\theta)}\right|$,

at least one second filter has a frequency response F_S of $|F_S| = \left|\frac{H_c(\phi)}{H_i(\phi)}\right|$,

at least one third filter has a frequency response F_T of $|F_T| = \left|\frac{H_c(\theta)}{H_i(\theta)}\right|$,

at least one first delay line provides a delay D_S of $D_S = t(\phi) - t(F_S)$, and

at least one second delay line provides a delay D_T of $D_T = t(\theta) - t(F_T)$,

wherein θ represents an angle associated with two physical speakers, ϕ represents an angle associated with two virtualized speakers, H_i represents a transfer function associated with one of the listener's ears, H_c represents a transfer function associated with another of the listener's ears, $t(\phi)$

represents an inter-time difference associated with the two virtualized speakers, $t(\theta)$ represents an inter-time difference associated with the two physical speakers, $t(F_S)$ represents a delay associated with at least one second filter, and $t(F_T)$ represents a delay associated with at least one third filter.

10. (Canceled).

11. (Previously Presented) A device, comprising:

an audio source operable to provide audio information; and

an audio processor operable to receive the audio information and process the audio information to virtualize at least one speaker so that, from a listener's perspective, sounds appear to come from at least one direction where a physical speaker is not present, the audio processor being configurable to virtualize the at least one speaker at any location in a space around the listener; and

wherein the audio processor comprises:

a controller configured to cause the audio processor to virtualize the at least one speaker at any location in a space around the listener;

one or more filters operable to filter one or more input signals comprising at least a portion of the audio information;

one or more forward crossover paths each operable to receive, delay, and filter an output from one of the filters;

one or more first combiners operable to produce first output signals for a first physical speaker using one or more of: one or more of the input signals, one or more outputs from the filters, and one or more outputs from the forward crossover paths;

one or more second combiners operable to produce second output signals for a second physical speaker using one or more of: one or more of the input signals, one or more outputs from the filters, and one or more outputs from the forward crossover paths;

a first feedback crossover path operable to receive, delay, and filter the first output signals, the one or more second combiners further operable to produce the second output signals using an output from the first feedback crossover path; and

a second feedback crossover path operable to receive, delay, and filter the second output signals, the one or more first combiners further operable to produce the first output signals using an output from the second feedback crossover path.

12. (Canceled)

13. (Previously Presented) The device of Claim 11, further comprising an attenuator operable to attenuate additional input signals;

wherein the one or more first combiners are further operable to produce the first output signals using the attenuated input signals; and

wherein the one or more second combiners are further operable to produce the second output signals using the attenuated input signals.

14. (Previously Presented) The device of Claim 11, wherein:

each forward crossover path comprises a first delay line and a second filter;

each feedback crossover path comprises a second delay line and a third filter; and

the audio processor is configured by altering a frequency response of one or more of the filters and a delay of one or more of the delay lines.

15. (Previously Presented) The device of Claim 11, wherein the audio processor is operable to virtualize five speakers using two physical speakers.

16. (Previously Presented) The device of Claim 11, wherein the audio source comprises at least one of a television tunes, a radio tuner, a CD reader, and a DVD reader.

17. (Previously Presented) The device of Claim 11, wherein the audio source comprises an audio/video source operable to provide both audio and video information; and

further comprising a video processor operable to process the video information.

18. (Previously Presented) An apparatus for virtualizing a speaker at a location in space, comprising:

one or more filters operable to filter one or more input signals comprising audio information;

one or more forward crossover paths each operable to receive, delay, and filter an output from one of the filters;

one or more first combiners operable to produce first output signals for a first physical speaker using one or more of: one or more of the input signals, one or more outputs from the filters, and one or more outputs from the forward crossover paths;

one or more second combiners operable to produce second output signals for a second physical speaker using one or more of: one or more of the input signals, one or more outputs from the filters, and one or more outputs from the forward crossover paths;

a first feedback crossover path operable to receive, delay, and filter the first output signals, the one or more second combiners further operable to produce the second output signals using an output from the first feedback crossover path; and

a second feedback crossover path operable to receive, delay, and filter the second output signals, the one or more first combiners further operable to produce the first output signals using an output from the second feedback crossover path.

19. (Previously Presented) The apparatus of Claim 18, further comprising an attenuator operable to attenuate additional input signals;

wherein the one or more first combiners are further operable to produce the first output signals using the attenuated input signals; and

wherein the one or more second combiners are further operable to produce the second output signals using the attenuated input signals.

20. (Previously Presented) The apparatus of Claim 18, wherein:

each forward crossover path comprises a first delay line and a second filter;

each feedback crossover path comprises a second delay line and a third filter; and

the apparatus is configured by altering a frequency response of one or more of the filters and a delay of one or more of the delay lines.

21. (Previously Presented) The apparatus of Claim 18, further comprising a controller operable to configure the apparatus.

22. (Previously Presented) The apparatus of Claim 21, wherein the controller is operable to configure the apparatus based at least partially on locations of two or more physical speakers and locations of the speakers being virtualized.

23. (Previously Presented) The apparatus of Claim 18, wherein the audio processor is operable to virtualize five speakers using two physical speakers, the five virtualized speakers comprising a center speaker, two frontal speakers, and two surround sound speakers.

24. (Previously Presented) The apparatus of Claim 18, wherein:

the one or more filters comprise at least one first filter;

the one or more forward crossover paths each comprises a first delay line and a second filter;

the feedback crossover paths each comprises a second delay line and a third filter;

at least one first filter has a frequency response P of $|P| = \left|\frac{H_i(\phi)}{H_i(\theta)}\right|$,

at least one second filter has a frequency response F of $|F| = \left|\frac{H_c(\phi)}{H_i(\phi)}\right|$,

at least one third filter has a frequency response F_T of $|F_T| = \left|\frac{H_c(\theta)}{H_i(\theta)}\right|$,

at least one first delay line provides a delay D of $D = t(\phi) - t(F)$, and

at least one second delay line provides a delay D_T of $D_T = t(\theta) - t(F_T)$,

wherein θ represents an angle associated with at least one physical speaker, ϕ represents an angle associated with at least one virtualized speaker, H_i represents a transfer function associated with one of the listener's ears, H_c represents a transfer function associated with another of the listener's ears, $t(\phi)$ represents an inter-time difference associated with the at least one virtualized speaker, $t(\theta)$ represents an inter-time difference associated with the at least one physical speaker, $t(F)$ represents a delay associated with at least one second filter, and $t(F_T)$ represents a delay associated with at least one third filter.

25. (Previously Presented) The apparatus of Claim 18, wherein:

the one or more filters comprise two first filters;

the one or more forward crossover paths comprise two forward crossover paths each comprising a first delay line and a second filter;

the feedback crossover paths each comprises a second delay line and a third filter;

at least one first filter has a frequency response P_S of $|P_S| = \left|\frac{H_i(\phi)}{H_i(\theta)}\right|$,

at least one second filter has a frequency response F_S of $|F_S| = \left|\frac{H_c(\phi)}{H_i(\phi)}\right|$,

at least one third filter has a frequency response F_T of $|F_T| = \left|\frac{H_c(\theta)}{H_i(\theta)}\right|$,

at least one first delay line provides a delay D_S of $D_S = t(\phi) - t(F_S)$, and

at least one second delay line provides a delay D_T of $D_T = t(\theta) - t(F_T)$,

wherein θ represents an angle associated with two physical speakers, ϕ represents an angle associated with two virtualized speakers, H_i represents a transfer function associated with one of the listener's ears, H_c represents a transfer function associated with another of the listener's ears, $t(\phi)$ represents an inter-time difference associated with the two virtualized speakers, $t(\theta)$ represents an inter-time difference associated with the two physical speakers, $t(F_S)$ represents a delay associated with at least one second filter, and $t(F_T)$ represents a delay associated with at least one third filter.

26. (Previously Presented) The apparatus of Claim 18, wherein:

the one or more filters comprise a first filter, two second filters, and two third filters;

the one or more forward crossover paths comprise two first forward crossover paths each comprising a first delay line and a fourth filter and two second forward crossover paths each comprising a second delay line and a fifth filter;

the feedback crossover paths each comprises a second delay line and a sixth filter;

at least one first filter has a frequency response P_C of $|P_C| = \left|\frac{H_i(0^\circ)}{H_i(\theta)}\right|$,

at least one second filter has a frequency response P_F of $|P_F| = \left|\frac{H_i(\omega)}{H_i(\theta)}\right|$,

at least one third filter has a frequency response P_S of $|P_S| = \left|\frac{H_i(\phi)}{H_i(\theta)}\right|$,

at least one fourth filter has a frequency response F_F of $|F_F| = \left|\frac{H_c(\omega)}{H_i(\omega)}\right|$,

at least one fifth filter has a frequency response F_S of $|F_S| = \left|\frac{H_c(\phi)}{H_i(\phi)}\right|$,

at least one sixth filter has a frequency response F_T of $|F_T| = \left|\frac{H_c(\theta)}{H_i(\theta)}\right|$,

at least one first delay line provides a delay D_F of $D_F = t(\omega) - t(F_F)$,

at least one second delay line provides a delay D_S of $D_S = t(\phi) - t(F_S)$, and

at least one third delay line provides a delay D_T of $D_T = t(\theta) - t(F_T)$,

wherein θ represents an angle associated with two physical speakers, ϕ represents an angle associated with two first virtualized speakers, ω represents an angle associated with two second

virtualized speakers, H_i represents a transfer function associated with one of the listener's ears, H_c represents a transfer function associated with another of the listener's ears, $t(\phi)$ represents an inter-time difference associated with the two first virtualized speakers, $t(\omega)$ represents an inter-time difference associated with the two second virtualized speakers, $t(\theta)$ represents an inter-time difference associated with the two physical speakers, $t(F_F)$ represents a delay associated with at least one fourth filter, $t(F_S)$ represents a delay associated with at least one fifth filter, and $t(F_T)$ represents a delay associated with at least one sixth filter.

27. (Previously Presented) A method, comprising:

generating first output signals for a first physical speaker;

generating second output signals for a second physical speaker;

filtering one or more input signals to produce one or more filtered input signals;

providing one or more of the filtered input signals to one or more forward crossover paths; and

generating the first and second output signals using one or more of: one or more of the input signals, one or more of the filtered input signals, and one or more outputs from the forward crossover paths;

providing the second output signals to a first feedback crossover path operable to receive, delay, and filter the second output signals; and

providing the first output signals to a second feedback crossover path operable to receive, delay, and filter the first output signals;

wherein generating the first output signals further comprises using an output from the second feedback crossover path;

wherein generating the second output signals further comprises using an output from the first feedback crossover path; and

wherein the first output signals emulate effects of a virtual speaker on one ear of a listener, the second output signals emulate effects of the virtual speaker on another ear of the listener, and each of the output signals at least partially cancels crosstalk caused by the other output signals.

28. – 29. (Canceled).

30. (Previously Presented) The method of Claim 32, wherein the first and second output signals emulate the effects of multiple virtual speakers on the ears of the listener.

31. (Previously Presented) The method of Claim 32, wherein the first and second output signals emulate the effects of multiple virtual speakers at any locations in a space around the listener.

32. (Currently Amended) A method, comprising:

generating first output signals for a first physical speaker;

generating second output signals for a second physical speaker;

wherein the first and second output signals are produced using one or more first filters, one or more forward crossover paths each comprising a first delay line and a second filter, and two feedback crossover paths each comprising a second delay line and a third filter; and

individually altering a frequency response of one or more of the filters and a delay of one or more of the delay lines to change the location of one or more of the virtualized speakers.